**MDEV1001**

**IN-CLASS-Assignment 1– Database Relationships & Normalization**

The CEO of the large Fitness Club - where you work, as the manager of the IT department, has asked for a new database which will be used to manage information related to trainer, gym class, and gym supervisors.

Upon request you are provided with the following:

* The club collects information for all classes, Trainers, and teachers shown in APPENDIX A (below)
* After further investigation you also receive additional information regarding the operation of the club shown in APPENDIX B (below):

1. **Based on your previous experience you know you must do the following:**  
   Organize the Data captured logically to form data groups/Tables **[15 Marks]**
   1. List and show the groups separately (prior to drawing the table in the following questions)
2. Determine & list the primary keys – clearly identifying each related table **[3 marks]**
3. Determine & list the foreign keys - clearly identifying each related table **[2 Marks]**
4. Determine the data types to be assigned to each data item captured – as shown APPENDIX A -(0.5 points each) **[11 Marks]**
5. Determine and briefly explain **all** the relationships that will exist between tables in the database **[7 Marks]**
6. Create an entity relationship diagram for all tables showing the associations between each   
   **[12 Marks]**
   1. All tables must be in 3rd normal form **[10 Marks]**

**/60**

*NOTE:*

* *Answer each question separately*
* *Use Microsoft Excel/word/ power point to create your submission. Draw the tables and the diagrams using the tools available; you may also use any other drawing tool – the final submission for all diagrams.* ***must*** *be in a common format (word / excel / jpg/ pdf)*

**APPENDIX A:**

**The Following information is captured – list is not grouped/organized**

* Trainer Name
* Gym Class Name
* Trainer home Address Street
* Trainer certification name
* Gym supervisor certification ID
* Gym supervisor ID
* Trainer Address City
* Trainer home Address Province/State
* gym Class ID
* Gym class location (room number in building)
* Gym supervisor certification description
* Trainer Address Country
* Trainer Email address
* Trainer/Supervisor school contact email
* Trainer ID
* Gym class supervisor ID
* Trainer Certification description
* Gym Supervisor Name
* Gym supervisor certification Name
* Trainer certification ID
* Trainer/Supervisor school Name (the school the trainer received the certification at)
* Trainer/Supervisor School ID

**APPENDIX B:**

**Information regarding the club operations:**

* Only Supervisors manage the gym classes
* Trainers are responsible for teaching classes assigned to them
* Trainers can teach multiple classes
* A class can also be taught by multiple trainers
* The trainer certifications are the same as the supervisor certifications; the information collected (e.g., ID number, description) is the same.
* Trainer and supervisors can go to the same school.
* Trainers/Supervisors can go to only 1 school